UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,234	05/11/2001	Geoffrey S. Strongin	2000.080000/TT4828	5962

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WILLIAMS, MORGAN & AMERSON, P.C.
10333 RICHMOND, SUITE 1100
HOUSTON, TX 77042

EXAMINER
COURTENAY III, ST JOHN

ART UNIT	PAPER NUMBER
2126	

DATE MAILED: 10/29/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/853,234	STRONGIN ET AL.
	Examiner	**Art Unit**
	St. John Courtenay III	2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *11 May 2001* .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-31* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-31* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

ST. JOHN COURTENAY III
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s) _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

U.S. Patent and Trademark Office
PTOL-326 (Rev. 04-01)   Office Action Summary   Part of Paper No. 4

Detailed Action

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 31 are rejected under 35 U.S.C. § 102(b) as being anticipated by **Angelo et al.** (U.S. Patent 5,850,559).

As per independent claim 1:
Angelo teaches a programming code for execution while a computer system is in system management mode (SMM), the code comprising:

- one or more instructions executable while the computer system is in SMM [e.g., see *"SMI places the computer in system management mode, causing an SMI handler to routing to be executed. In turn, the SMI handler responds by executing all applications registered with the application registrar. Importantly, the registered applications are verified and executed in a secure manner"* and associated discussion col. 3, lines 61-67; see col. 13, lines 5-14];

- an entry or exit location [e.g., entry and exit locations are inherent for any executable code or application, as disclosed above – see "registered applications"]; and

- one or more additional instructions executable while the computer system is in SMM [Angelo discloses a plurality of registered applications that are securely executed in SMM, e.g., see discussion col. 3, lines 61-67; col. 13, lines 5-14 -

it is inherent that any executable application is comprised of "one or more executable instructions," as claimed] .

As per dependent claim 2:
Angelo teaches:

- another entry or exit location placed after the one or more additional instructions executable while the computer system is in SMM [col. 8, lines 11-29 – see discussion of loading a new address into the microprocessor's SMI starting address register]; and

- one or more further instructions executable while the computer system is in SMM [Angelo discloses a plurality of registered applications that are securely executed in SMM, e.g., see discussion col. 3, lines 61-67; it is inherent that any executable application is comprised of "one or more executable instructions," as claimed; see also col. 13, lines 5-14].

As per dependent claim 3:
Angelo teaches:

- the entry or exit location includes both an entry location and an exit location [e.g., see discussion of SMI starting address register, col. 8, lines 14-17]; and

- the another entry or exit location includes both another entry location and another exit location [see col. 8, lines 11-29 – see discussion of loading a new address into the microprocessor's SMI starting address register].

As per dependent claim 4:
Angelo inherently teaches the entry or exit location includes both an entry location and an exit location [inherently part of an

SMI handler; also every executable program inherently has an entry location and an exit location].

As per dependent claim 5:
Angelo teaches the programming code is stored in a memory [col. 8, lines 11-15].

As per dependent claim 6:
Angelo teaches the memory is a BIOS ROM [col. 6, lines 58-60].

As per dependent claim 7:
Angelo teaches the programming code is stored in SMM space [col. 8, lines 1-29].

As per independent claim 8:
Angelo teaches a method of operating a personal computer system while in SMM, the method comprising:

- executing one or more instructions of SMM code routine while the personal computer system is in SMM [e.g., see *"SMI places the computer in system management mode, causing an SMI handler to routing to be executed. In turn, the SMI handler responds by executing all applications registered with the application registrar. Importantly, the registered applications are verified and executed in a secure manner"* and associated discussion col. 3, lines 61-67; it is inherent that any executable application is comprised of "one or more executable instructions" – see also col. 13, lines 5-14];

- exiting the SMM code at an exit location not at the end of the SMM code routine [see shutdown command discussion col. 4, lines 45-56].

As per dependent claim 9:
Angelo teaches:

- re-entering the SMM code routine at the exit location [col. 8, lines 18-29]; and

- continuing executing instructions of the SMM code routine while the personal computer system is in SMM [see discussion col. 8, lines 1-29].

As per dependent claim 10:
Angelo teaches, upon entering SMM, beginning executing instructions of the SMM code routine for a first time at a location other than a start of the SMM code routine [col. 8, lines 11-29 – see discussion of loading a new address into the microprocessor's SMI starting address register].

As per dependent claim 11:
Angelo teaches entering the SMM code routine at an entry location other than a start of the SMM code routine [col. 8, lines 11-29 – see discussion of loading a new address into the microprocessor's SMI starting address register].

As per dependent claim 12:
Angelo teaches saving a state of the SMM code routine before exiting SMM [e.g., see "hibernation logic 199" and associated discussion col. 4, line 55; see also hibernation mode discussion col. 12, lines 5-17; see also the saving and reloading of the hash table used to verify application integrity and associated discussion, col. 4, lines 9-44].

As per independent claim 13:

Angelo teaches a computer readable program storage device encoded with instructions that, when executed by a personal computer system, performs a method operating the personal computer system while in SMM, the method comprising:

- executing one or more instructions of SMM code routine while the personal computer system is in SMM [see SMI handler and associated discussion col. 13, line 2; see discussion of secure execution of registered applications in system management mode, col. 32, lines 60-67; also col. 13, lines 6-8];

- exiting the SMM code at an exit location not at the end of the SMM code routine [e.g. if a registered program is listed in the application registrar 202, the SMM code vectors or exits to the entry point of the first registered application program [col. 13, lines 4-8].

As per dependent claim 14:

teaches the method further comprising:

- re-entering the SMM code routine at the exit location [col. 8, lines 18-29]; and

- continuing executing instructions of the SMM code routine while the personal computer system is in SMM [col. 8, lines 11-29 – see discussion of loading a new address into the microprocessor's SMI starting address register].

As per dependent claim 15:

Angelo teaches the step of, upon entering SMM, beginning executing instructions of the SMM code routine for a first time at a location other than a start of the SMM code routine [see

discussion of secure execution of a plurality of registered applications, col. 32, lines 60-67].

As per dependent claim 16:
Angelo teaches entering the SMM code routine at an entry location other than a start of the SMM code routine [see discussion of secure execution of registered applications, col. 32, lines 60-67].

As per dependent claim 17:
See the rejection of claim 12 above.

As per independent claim 18:
Angelo teaches a method of operating a personal computer system while in SMM, the method comprising:

- entering SMM [col. 3, line 62];

- loading an SMM code routine at an entry location other than a start of the SMM code routine [see discussion of secure execution of registered applications, col. 3, lines 60-67; see also col. 13, lines 5-14]; and,

- executing one or more instructions of the SMM code routine while the personal computer system is in SMM, beginning at the entry location other than the start of the SMM code routine [see discussion of secure execution of a plurality of registered applications, col. 2, lines 60-67].

As per dependent claim 19:
Angelo teaches exiting the SMM code routine at an end of the SMM code routine [see SMI shutdown handler, col. 4, lines 46-52].

As per dependent claims 20, 22:

See the rejection of claim 12 above.

As per dependent claim 21:
Angelo teaches exiting the SMM code routine at an exit location other than an end of the SMM code routine [e.g. if a registered program is listed in the application registrar 202, the SMM code vectors or exits to the entry point of the first registered application program - col. 13, lines 4-8].

As per dependent claim 23:
Angelo teaches reloading a saved SMM state upon entering SMM [e.g., see reloading the hash table used to verify application integrity and associated discussion col. 4, lines 12-14].

As per dependent claim 24:
Angelo teaches reloading the saved SMM state upon entering SMM comprises reading an entry of a storage location that provides an address to a location of the saved SMM state [e.g., see reloading the hash table used to verify application integrity and associated discussion col. 4, lines 12-14; i.e., – the starting address of the hash table is inherently referenced to read the contents of the hash table, col. 4].

As per independent claim 25:
Angelo teaches a computer readable program storage device encoded with instructions that, when executed by a personal computer system, performs a method operating the personal computer system while in SMM, the method comprising:

- entering SMM [col. 3, line 62];

- loading an SMM code routine at an entry location other than a start of the SMM code routine [see discussion of secure

execution of registered applications, col. 32, lines 60-67];
and

- executing one or more instructions of the SMM code routine
  while the personal computer system is in SMM, beginning at
  the entry location other than the start of the SMM code
  routine [see discussion of secure execution of a plurality of
  registered applications, col. 32, lines 60-67].

As per dependent claim 26:
See the rejection of claim 19 above.

As per dependent claims 27 & 29:
See the rejection of claim 12 above.

As per dependent claim 28:
See the rejection of claim 21 above.

As per dependent claim 30:
Angelo teaches reloading a saved SMM state upon entering SMM
[e.g., see reloading the hash table used to verify application
integrity and associated discussion col. 4, lines 12-14].

As per dependent claim 31:
Angelo inherently teaches that the reloading of the saved SMM
state upon entering SMM comprises reading an entry of a storage
location that provides an address to a location of the saved SMM
state [e.g., see reloading the hash table used to verify application
integrity and associated discussion col. 4, lines 12-14].

Prior Art not relied upon:

Please refer to the references listed on the attached PTO-892
which are not relied upon in the claim rejections detailed above.

How to Contact the Examiner:

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **St. John Courtenay III** whose voice telephone number is **(703) 308-5217.** A voice mail service is also available at this number.   Normal Flex work schedule: M – F   7:30 AM - 4:00 PM

- **All responses sent by U.S. Mail should be mailed to:**

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Patent Customers advised to FAX communications to the USPTO

http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/faxnotice.pdf

PTO FAX NUMBERS:
- **AFTER-FINAL OFFICIAL faxes must be signed and sent to: (703) 746-7238.**
- **BEFORE-FINAL OFFICIAL faxes must be signed and sent to: (703) 746-7239.**

- Any inquiry of a general nature or relating to the status of this application should be directed to the **TC 2100 Group receptionist: (703) 305-3900.**

Please direct inquiries regarding fees, paper matching, and other issues not involving the Examiner to:
      Technical Center 2100 CUSTOMER SERVICE: 703 306-5631

The Manual of Patent Examining Procedure (MPEP) is available online at:
http://www.uspto.gov/web/offices/pac/mpep/index.html

ST. JOHN COURTENAY III
PRIMARY EXAMINER

Paper #4 – First Office Action